FIBRE CHEMISTRY
Volume 31, Numbers 1-6, 1999
(A translation of *Khimicheskie Volokna*)

Engl./Russ.

Volume 31, Number 1, January-February, 1999

CHEMISTRY AND TECHNOLOGY OF CHEMICAL FIBRES

Fabrication of Metal-Containing Carbon Fibre Based on Modified Polycaproamide Fibre – Yu. D. Andrichenko and T. V. Druzhinina 1 3

Fabrication of Fibres from Sulfuric Acid Solutions of Copolyamides Containing Polyamide–Benzimidazol Units and Their Heat Treatment – V. N. Sugak, V. N. Kiya-Oglu, and L. L. Goloburdina 8 8

Stability Boundaries for Spinning of Fibres Based on Poly-*p*-PhenyleneTerephthalamide Through an Air Gap – V. N. Kiya-Oglu, T. A. Rozhdestvenskaya, L. D. Serova, and A. N. Spitsin 14 12

The Liquid-Crystalline and Turbostratic Structure of Fibres – M. M. Iovleva 21 17

Fibre-Forming Properties of Melts of Polypropylene–Copolymer of Ethylene with Vinyl Acetate Blends – I. A. Tsebrenko and V. A. Pakharenko 23 18

Membrane Transfer in Electrochemical Utilization of Lithium Chloride – A. V. Skolunov 26 21

Effect of Aqueous Dispersions of Pigments and Modifiers on the Properties of Viscose. Exchange of Experience – P. G. Penev 32 25

PROPERTIES AND USE OF CHEMICAL FIBRES

Fabrication of Fibre Materials Containing a Polymeric Antimicrobial – T. N. Yudanova, I. F. Skokova, E. A. Varlamova, and L. S. Gal'braikh 38 30

Production Technology of Sewn Cloth Made of Glass Fibres on "Malimo" Machines – Kh. A. Gasankhanova, B. I. Khizgiyaev, and K. N. Ushakova 44 34

Efficiency of Using Electrolytes in Fabrication of Fibre Materials with Low Wettability – E. V. Plotnikova, L. S. Gal'braikh, L. S. Sletkina, L. V. Redina, and N. V. Kolokolkina 47 36

MATERIALS SCIENCE

Analytical Prediction of Deformation of Polycaproamide Cloth – A. M. Stalevich, Z. I. Vakhitova, and V. E. Romanov 52 40

METHODS OF INVESTIGATION

Estimation of the Parameters of the Signal of a Random Process – I. D. Pupyshev and O. I. Korelova 60 44

Determination of the Concentration of Aromatic Polyamide in a Spinning Solution – L. N. Bykova, E. N. Papkova, O. Ya. Chesnokova, and A. V. Novikov 66 47

Determination of the Composition of Copolymers by Mass Spectrometry – A. T. Kalashnik, V. Ya. Efremov, and V. B. Glazunov 70 50

	Engl.	Russ.
MACHINES AND INSTRUMENTS		
Calculation of the Temperature Field of Heated Transport Cylinders with a Liquid Filler – D. A. Shurygin and I. Yu. Korneev	73	52
ECONOMICS, MANAGMENT, MARKETING		
A Systematic Approach to Assessing the Development of Chemical Fibre Plants – O. N. Zotikova	77	55
OBITUARY		
In Memory of Oleg Ivanovich Nachinkin	81	59

Volume 31, Number 2, March-April, 1999

"TEXTILE-98" SCIENTIFIC-TECHNICAL CONFERENCE		
All-Russian Scientific-Technical Conference "Modern Technologies and Equipment in the Textile Industry" – S. D. Nikolaev, V. S. Lapshenkova, and L. A. Dmitrieva	83	3
Effect of High-Temperature Treatment on Thermochemical Transformations of Oxidized Polyvinyl Alcohol Fibres – T. V. Druzhinina, L. A. Nazar'ina, D. V. Volkov, and N. Yu. Mosina	86	5
Fabrication of Textile Materials with a Combined Biological Effect – T. N. Yudanova, I. F. Skokova, L. I. Gavrikova, and L. S. Gal'braikh	90	8
Properties of Polyamide Fibres Treated with Aqueous Solutions of Metal Salts – S. V. Frolov, A. V. Artemov, and S. M. Kiryukhin	95	12
Efficacy of Using Domestic and Imported Preparations for Giving Fibre Materials Oil- and Water-Repellent Properties – L. V. Redina, E. V. Plotnikova, E. V. Evstigneeva, K. P. Khomyakov and N. V. Kolokolkina	99	14
Some Possibilities for Expanding the Assortment of Chemical Fibres and Filaments of New Structures – A. G. Kogan, N. V. Skobova, N. N. Yasinskaya, and S. S. Medvetskii	102	16
Combination Fibres of a New Structure – V. A. Rodionov and D. A. Oderov.	105	18
Crimping of Synthetic Fibres for Carpets – L. I. Koroteeva, A. P. Yaskin, and V. I. Glushenkov	108	20
New Chemical Fibres and Yarn for Upholstery and Industrial Fabrics – A. G. Kogan, S. S. Medvetskii, N. A. Tulinov, and N. V. Skobova	112	22
Multifunctional Nonwoven Cloth for Filtration of Suspensions – E. E. Savitskaya	115	24
Effect of the Binder on the Capillary Properties of Nonwoven Materials – V. A. Volkov, V. M. Gorchakova, and S. V. Belova	117	25
Chemistry of Metallization of Fibreglass Fabrics – N. N. Pavlov, V. V. Pavlova, K. I. Kobrakov, and N. V. Sedova	120	27
Investigation and Design of a Three-Spindle False-Twist Mechanism – A. F. Proshkov	124	30
Vortex Apparatus for Drying Fibre-Forming Polymers – A. V. Akulich and B. S. Sazhin	128	32
Improvment of Rewinding of Chemical Fibres on Cross-Winding Bobbins – V. P. Zaitsev, I. N. Panin, and D. I. Nazarov	132	35
Economic Effectiveness of Implementation of an Investment Plan – O. N. Zotikova	136	37
PHYSICAL CHEMISTRY OF FIBRE-FORMING POLYMERS		
Morphology of the Structure of Polyacrylonitrile Fibres – M. M. Iovleva, S. I. Banduryan, L. A. Zlatoustova, V. M. Radishevskii, A. T. Serkov, and G. A. Budnitskii	140	41

	Engl./Russ.	
Effect of High Pulsed Hydrostatic Pressure on the Optical Properties and Internal Residual Stresses of Highly Oriented Fibres – O. V. Sidorov, M. V. Shablygin, V. N. Belonenko, and A. M. Shchetinin	143	43
Formation of a Three-Dimensional Network During Alkaline Hydrolysis of Polyacrylonitrile Fibres – E. P. Romanova, I. G. Rumynskaya, I. I. Paptsova, and L. V. Emets	148	47
REGENERATION AND INDUSTRIAL ECOLOGY		
Adsorption Purification of Liquid Flows Applied to No-Waste Chemical Fibre Technologies. Review – E. I. Khodorov and V. B. Kvasha	153	51
Ultrafiltration Membranes for Removal of Caprolactam from Industrial Discharges – G. P. Denisova, S. E. Artemenko, T. P. Ustinova, L. L. Zhuravleva, and O. M. Sladkov	168	63

Volume 31, Number 3, May - June, 1999

Modern Para-Aramid Fibres. The Role of Tver'khimvolokno Joint-Stock Company in the Creation of an Armos Fibre Plant – N. N. Machalaba	171	3
Current Strategy for Technical Retooling Plants Manufacturing High-Strength Fibres and Articles Made of Them – A. A. Bogoslavskii, F. I. Vavilova, and L. I. Kolontai	180	10
CHEMISTRY AND TECHNOLOGY OF CHEMICAL FIBRES		
Fabrication and Properties of Antimicrobial Cellulose Materials Based on Polyelectrolyte Complexes – L. S. Gal'braikh, I. M. Karelina, and M. A. Penenzhik	184	14
Flow of Spinning Solution through Spinneret Openings and Deformation Resonance – A. T. Serkov and Yu. V. Afanas'eva	192	19
Infrared Spectroscopic Study of the Mechanism of Interaction in Polymer Blends – I. A. Tsebrenko and V. A. Pakharenko	197	23
Fabrication of a Weakly Basic Chemisorption Fibre with Aliphatic Amino Groups – N. F. Kalyanova and M. P. Zverev	201	25
Effect of the Cleaning Method on the Structure and Properties of Cotton Cellulose Fabricated by Combined Boiling and Bleaching – D. S. Nabiev, A. D. Tikhonovetskaya, S. M. Davydovskaya, N. D. Burkhanova, M. Yunusov, G. V. Nikonovich, and S. Sh. Rashidova	204	28
PROPERTIES AND USE OF CHEMICAL FIBRES		
Effect of the Molecular Weight of Poly-para-Aramids and Structural Changes in Heat Treatment on the Mechanical Indexes of the Fibres – V. N. Kiya-Oglu, A. V. Volokhina, and S. I. Banduryan	208	31
Permanent Deformation in Armos Fibre at a Temperature Below the Glass Transition Temperature – E. S. Tsobkallo, O. I. Nachinkin, and V. A. Kvartskheliya	215	36
Transverse Mechanical Characteristics of Highly Oriented Fibres – S. V. Sidorov, M. V. Shablygin, O. V. Sidorov, and A. M. Shchetinin	219	38
Effect of γ-Radiation on the Electrical Conductivity of Polycaproamide Fibres – G. V. Gusev, V. M. Polenichkin, B. I. Burkert, and B. M. Tarakanov	222	40
Effect of Ceresine on the Properties of Carbon Fibre Stuffing Box Packings – A. I. Burya, M. E. Kazakov, A. A. Burya, V. V. Il'yushonok, O. P. Chigvintseva, I. I. Nachovnyi, A. M. Trushnikov, and L. D. Vazheva	225	42

Engl./Russ.

Analysis of the Parameters of Sorption—Desorption Isotherms for Highly Higroscopic Fibres – G. I. Efremov 231 45
Degradation Processes in Texturing of Vidlon Polycaproamide Fibres – N. P. Gankov 237 49

GLASS FIBRES AND MATERIALS BASED ON THEM
Effect of the Structure of Glass Fibres on Their Physicomechanical Properties – Kh. A. Gasankhanova and K. N. Ushakova 240 52
Effective Diameter and Compactness of Glass Fibres as a Function of the Twisting Characteristics – D. D. Konyukhov, Kh. A. Gasankhanova, K. N. Ushakova, and M. Yu. Demeshev 243 54

Volume 31, Number 4, July-August, 1999

MOSCOW STATE TEXTILE ACADEMY — 80 YEARS
Universities and Science: Results of Recent Years – I. A. Martynov and S. D. Nikolaev 247 3
Chemisorption Fibres Based on Graft Copolymers: Fabrication and Properties. A Review – T. V. Druzhinina and L. A. Nazar'ina 252 8
Principles of Selection of Fire Retardants for Decreasing the Fire Hazard of Heterochain Fibre-Forming Polymers – N. S. Zubkova, N. G. Butylkina, and L. S. Gal'braikh 263 17
New Methods of Modifying the Surfase of Chemical Fibres to Decrease Wettability – E. V. Plotnikova, L. S. Gal'braikh, K. P. Khomyakov, L. S. Sletkina, and L. V. Redina 270 22
Synthesis and Properties of Water-Soluble Derivatives of Chitin. A Review – G. A. Vikhoreva, I. N. Gorbacheva, and L. S. Gal'braikh 274 25
Control of Binding of Protein in the Structure of Chemical Fibres and Films – N. R. Kil'deeva and L. S. Gal'braikh 279 29
Properties of Composites Containing Biologically Active Substances and the Polymeric Materials Prepared from Them – I. F. Skokova, T. N. Yudanova, L. S. Gal'braikh, G. S. Elfimova, N. V. Petrova, and E. Yu. Aleshina 283 32
Protection of Textile Materials Made of Different Types of Fibres from Biodeterioration with Special Dyes – K. I. Kobrakov, V. T. Kondratkov, G. S. Stankevich, and M. B. Dmitrieva 291 38
Dialog Intelligent Systems for Natural and Chemical Fibres Spinning Technology – A. V. Grachev 295 41
Mass Conductivity in Drying of a Fibre-Forming Polymer — Polycaproamide – M. K. Kosheleva 299 44
Physicochemical and Physicomechanical Properties of Polyether Urethane Films Modified with Polyethylene Glycol Additives – A. V. Artemov and Yu. M. Kushtov 302 46
Behavior of High-Modulus Fibres with Axial Compressive Loads – O. V. Sidorov, A. M. Shchetinin, S. V. Sidorov, and M. V. Shablygin 306 49
Variants of Use of the Modified Lindsley—Leont'eva Method for Chemical Fibre Spinning Products – V. G. Karyakin 311 52
Effect of Structural Modification of Polyester Fibres on the Strength of Nonwoven Materials – V. M. Gorchakova, B. A. Izmailov, and O. A. Gartsueva 315 54

	Engl.	Russ.
Protective Properties of Materials Used in Extreme Situations Against Aggressive Media – Yu. S. Shustov and S. V. Razuvaeva	318	56
Taxes in Evaluation of Hypothetical Innovations in Chemical Fibre Plants – O. N. Zotikova, L. E. Zernova, and S. E. Akopov	321	58
Methodological Principles for Characterization of the Chemical Fibre Market – N. S. Ivashchenko	328	63
OBITUARY		
In Memory of Vladimir Sergeevich Matveev	332	73

Volume 31, Number 5, September-October, 1999

The Current Stage of Production of Primarily Polyester Chemical Fibres and Filaments – E. M. Aizenshtein	335	3
CHEMISTRY AND TECHNOLOGY OF CHEMICAL FIBRES		
Reaction Scheme of Graft Polymerization of Hydroxyethyl Methacrylate on Polycaproamide Using a Heat-Treated Solution of the Monomer – L. V. Bogacheva and V. F. Zheltobryukhov		
Increasing the Spinning Stability of Acrylic Fibres – A. T. Serkov, L. A. Zlatoustova, G. A. Budnitskii, and M. B. Radishevskii	350	16
Surface Activity of Some Oiling Agents – L. N. Mizerovskii and V. V. Afanas'eva	355	19
Effect of Sodium Chloride on Rheological Properties and Cross-Linking in Melts of Polymer Blends – I. A. Tsebrenko and V. A. Pakharenko	360	23
Effect of the Type of Spinneret on the Quality of Polycaproamid Fibres – N. P. Gankov	365	27
PROPERTIES AND USE OF CHEMICAL FIBRES		
Use of Solutions of Salts for Improving the Consumer and Manufacturing Properties of Synthetic Fibres – N. N. Pavlov, V. M. Barantsev, T. E. Platova, V. V. Pavlova, and N. P. Dubankova	370	30
Study of the Kinetics of Release of Decametoxin from Modified Surgical Sutures in Aqueous Medium – E. A. Kovtun, N. N. Baglei, E. P. Plygan', and V. P. Sergeev	374	33
Measurement of the Torsional Strength of Chemical Fibres and Critical Parameters of Formation of Snarls – E. B. Belov, S. V. Lomov, N. N. Truevtsev, M. Bradshaw, and R. Harwood	380	37
Strength and Relaxation Properties of Synthetic Shoe Thread – E. S. Tsobkallo, L. N. Petrova, N. R. Turkina, and V. G. Tiranov	387	42
Use of Polyester Monofilaments in the Connecting Locks of Drying Screens — "Clothing" for Paper Machines – A. N. Mogil'nyi	391	45
PHYSICAL CHEMISTRY OF FIBRE-FORMING POLYMERS		
Temperature Sensitivity of Multilayer Optical Fibres – M. V. Shablygin, F. A. Shatalov, and A. V. Shepelev	394	48
Distribution of Compressive Stresses in Anisotropic High-Modulus Fibres – O. V. Sidorov and A. M. Shchetinin	398	50

	Engl.	Russ.
Strength with Axial Loads in Highly Oriented System – O. V. Sidorov and A. M. Shchetinin	401	51
FIBRE COMPOSITE MATERIALS		
Adhesive Strength of Bonds of Polymers with Carbon Fibres at Different Loading Rates – Yu. A. Gorbatkina, V. G. Ivanova-Mumzhieva, and A. Ya. Gorenberg	405	54

Volume 31, Number 6, November-December, 1999

CHEMISTRY AND TECHNOLOGY OF CHEMICAL FIBRES		
Hollow Fibres for Medical Applications. A Review – L. P. Perepechkin and N. P. Perepechkina	411	3
Graft Polymerization of Hydroxyethyl Methacrylate to Polycaproamide Using a Heat-Treated Solution of Monomer – L. V. Bogacheva and V. F. Zheltobryukhov	421	11
Structural and Chemical Transformations in Thermooxidative Stabilization of Copolymeric Polyacrylonitrile Fibres – A. T. Kalashnik, L. A. Zlatoustova, G. Ya. Rudinskaya, and A. T. Serkov	425	14
Layer-by-Layer Rupture of the Jet in Spinning Chemical Fibres in the Deformation Resonance Mode – A. T. Serkov, M. B. Radishevskii, and Yu. V. Afanas'eva	433	19
Intensification of Thermooxidation of Polyacrylonitrile Fibres – O. N. Panichkina, T. A. Belousova, A. T. Serkov, G. A. Budnitskii, and M. B. Radishevskii	437	22
Some Characteristics of Liquid Water Described with a Cluster-Hyroscopic Model – A. V. Skolunov	441	25
PROPERTIES AND USE OF CHEMICAL FIBRES		
Effect of Molecular Mobility on the Deformation Characteristics of Polycaproamide Fibres – B. M. Tarakanov, B. I. Burkert, E. S. Gromova, Yu. I. Sokolov, and D. M. Starodubov	449	30
Effect of Acetone and Ethanol on the Physicomechanical Properties of Aramid Fibres – I. M. Zakharova, A. E. Zavadskii, and Z. N. Zhukova	452	31
Stability of Polycaproamide Suture Thread with Coatings in Radiation Sterilization – E. A. Kovtun, E. P. Plygan', V. P. Sergeev, and G. I. Glukhovskaya	455	34
Fabrication and Properties of Biocidal Fibre Materials – T. F. Kostina, M. P. Zverev, V. M. Slavyanskii, and S. V. Zakharov	460	37
Assortment of Viscose Textile Fabrics from the Svetlogorsk Khimvolokno Manufacturing Association and the Carbon Materials Based on Them – A. A. Lysenko, A. A. Yakobuk, M. P. Polkhovskii, O. V. Astashkina, S. I. Timoshenko, and N. N. Udal'tsova	463	39
FIBRE COMPOSITE MATERIALS		
Structure of Composite Materials Based on Aluminum and Coreless Silicon Carbide Fibres – A. A. Aksenov, Z. F. Egorushkina, E. A. Churmukov, and G. A. Budnitskii	467	42
Polyethylene with Low Combustibility for Construction Applications Containing Chemical Fibres and Disperse Fillers – M. V. Naumova, L. G. Panova, S. E. Artemenko, and Yu. A. Treger	473	46
PHYSICAL CHEMISTRY OF FIBRE-FORMING POLYMERS		
Structure of Polymer Gels and Solutions – P. M. Pakhomov, S. D. Khizhnyak, E. V. Kruglova, V. Nierling, and A. E. Chmel'	477	50

	Engl.	Russ.
Effect of Heat and Mechanical Effects on Optical Fibres with Different Coatings – M. V. Shablygin, F. A. Shatalov, and A. V. Shepelev	481	52
Photoacoustic Methods of Investigating Fibre Materials – O. V. Sidorov, A. M. Shchetinin, and S. V. Sidorov	484	54
Raman Spectroscopic Study of the Characteristics of Chemical Fibres with Axial Compressive Loads – O. V. Sidorov, A. M. Shchetinin, and M. V. Shablygin	489	58
MACHINES AND EQUIPMENT		
Model DD 2000 High-Speed Universal Twisting Frame for Technical Fibres – E. M. Aizenshtein and V. N. Efremov	492	60
Testing the EKS 201 Rewinding Module – A. A. Bogoslavskii, S. A. Bogdanenko, L. I. Kolontai, F. I. Vavilova, R. I. Rebrova, A. V. Yasyukov, and V. N. Efremov	496	62
OBITUARY		
Anna Alexandrovna Tager	499	64
ERRATUM	500	